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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,673	02/06/2004	Gerald George Pechanek	800.0141	7530
73846	7590	12/19/2008		
Peter H. Priest 5015 Southpark Drive, Suite 230 Durham, NC 27713			EXAMINER JOHNSON, BRIAN P	
			ART UNIT	PAPER NUMBER
			2183	
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			12/19/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/773,673	<b>Applicant(s)</b> PECHANЕК ET AL.	
	<b>Examiner</b> BRIAN P. JOHNSON	<b>Art Unit</b> 2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-16, 18, 19, 21-29 and 31 is/are allowed.
- 6) ☒ Claim(s) 17 and 20 is/are rejected.
- 7) ☒ Claim(s) 30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

DETAILED ACTION

1. Claims 9-26 have been examined; Claims 1-8 have been cancelled.

Acknowledgment of papers filed: amendments and remarks filed on 24 September 2008.

***Specification***

2. Title is accepted. Objection is withdrawn.

***Allowable Subject Matter***

3. Claims 9-16, 18, 19, 21-29 and 31 are allowed.
4. Claim 30 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheaffer/Miller in view of Pechanek (U.S. Patent No. 6,173,389).

7. Regarding claim 20, Sheaffer/Miller discloses a very long instruction word (VLIW) memory system (Miller col 13 lines 1-4) comprising: a plurality of instruction slots for storing instruction words forming a VLIW (Miller col 13 lines 1-4), at least one of said plurality of instruction slots having a compressed format for storing a compressed instruction having a narrower instruction format with respect to an instruction format required in a program storage wherein the VLIW resides at an addressable location in a VLIW memory, the VLIW memory holding VLIWs that may be fetched for execution (col 1 lines 33-50 or col 2 line 65 to col 3 line 7 and Miller col 13 lines 1-4);

And means for loading said at least one compressed format slot with a compressed instruction (Miller col 13 lines 1-4)

Sheaffer alone fails to disclose that VLIW memory and a standard size VLIW instruction.

Miller discloses a VLIW system with variable length VLIW instructions (col 13 lines 1-4)

Sheaffer would have been motivated to utilize this more massively VLIW approach in order to maximize efficiency of the processing units "so that for every clock cycle, each processing unit may execute a separate instruction."

It would have been obvious at the time of the invention for one of ordinary skill in the art to take the processing system of Sheaffer and incorporate the variable length

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VLIW instructions of Miller. The combination would still incorporate the functionality of Sheaffer in that Sheaffer is capable of combining two microinstructions (a normal instruction and a NOP) of the VLIW instruction for expanded operand capabilities.

Sheaffer/Miller fails to disclose the use of a separate VLIW memory.

Pechanek discloses such a memory (col 2 lines 63-67).

Sheaffer/Miller would have been motivated to use the separate memories in order to better organize the memory by instruction type/size allowing for programming simplicity and instruction fetch efficiency.

It would have been obvious at the time of the invention for one of ordinary skill in the art to take the processing system of Scheaffer/Miller and incorporate the separate VLIW memory of Pechanek.

8. Regarding claim 17, Sheaffer discloses a very long instruction word (VLIW) instruction (col 5 lines 48-51) memory (VIM) basket (VIMB) (col 7 lines 1-3)

an instruction bit organizer wherein the instruction bit organizer receives instructions as data from the local data memory according to the data address information and organizes the bits from the data encoded instructions into proper format to be loaded into the VIMB in response to execution of the LV instruction (Col 3 line 51 to col 4 line 15);

And the VIMB comprising a plurality of instruction slots having expanded instruction slot width greater than the width of the instruction format required in program storage (col 1 lines 33-50 or col 2 line 65 to col 3 line 7).

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Sheaffer/Miller fails to disclose a load indirect instruction or a mask bit field specifying which slots will be loaded in a VLIW having at least one instruction slot that is an expanded instruction slot, the VLIW accessible to be loaded at an addressable location into the VIMB.

Pechanek discloses a load indirect instruction and a load mask bit field (col 3 lines 24-33).

The technique in Pechanek is advantageous to utilize hardware more efficiently and reduce duplicate instructions (col 2 lines 12-27)

It would have been obvious at the time of the invention for one of ordinary skill in the art to take the processing system of Sheaffer/Miller and incorporate the indirect instruction with load mask bit field of Pechanek.

### ***Response to Arguments***

Applicant's arguments with respect to claim 20 have been considered but are moot in view of the new ground(s) of rejection. Regarding claim 17, Examiner notes that the "bit organizer" is considered to be the inherent control unit of the processing system that allows the claimed functionality to be completed. Moreover, it does not appear that the alleged distinctions between Pechanek '389 and Applicant's invention are made clear within the claim language.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian P. Johnson whose telephone number is (571) 272-2678. The examiner can normally be reached on 8-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian Johnson Patent Examiner, Art Unit 2183

/Eddie P Chan/

Supervisory Patent Examiner, Art Unit 2183